Bulletin of the Russian Academy of Sciences: Physics 2010 vol.74 N10, pages 1455-1458

# Investigating the magnetic structure and anisotropic Pr-Fe exchange interaction in a PrFe3(BO3)4 single crystal by optical spectroscopy

Stanislavchuk T., Popova M., Malkin B., Bezmaternykh L.
*Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia*

## Abstract

Optical spectroscopy was used to obtain information on the energy and symmetry of the crystal-field (CF) levels within the 4f 2 configuration of Pr3+ in PrFe3(BO3) 4, along with changes in the frequencies and intensities of the f-f transition lines upon magnetic ordering (T N = 32K). Analysis of the experimental data yielded the values of the parameters for the CF and the anisotropic Pr3+-Fe3+ exchange-interaction Hamiltonians. © 2010 Allerton Press, Inc.

http://dx.doi.org/10.3103/S1062873810100400